

19/11/24 week 5

Program 5: Develop a java program to create a class Bank that maintains two kinds of account for its customers, one called savings account & the other current account. The savings account provides compound interest & withdrawal facilities but no cheque book facility. * The current account provides cheque book facility but no interest. * Current account holders should also maintain a minimum balance & if the balance falls below this level, a service charge is imposed.

Create class Account that stores customer-name, account number & type of account. From this derive the class cur-acct and sav-acct to make them more specific to their requirements. Include the necessary methods in order to achieve the following tasks:

- a) Accept deposit from customer & update balance
- b) Display the balance
- c) Compute a deposit interest
- d) Permit withdrawal & update balance
- e) Check for the minimum balance, impose penalty if necessary & update balance.

```

import java.util.*;
class Bank Account {
    String name;
    int acc;
    double bal;
    Account (String n, int a, double b)
    {
        name = n;
        acc = a;
        bal = b;
    }
    void deposit(double amt)
    {
        bal += amt;
        System.out.println("Deposited done. Current Balance : " + bal);
    }
    void printBal()
    {
        System.out.println("Current Balance = Rs " + bal);
    }
}
class CurAcc extends Account {
    double minbal = 5000; charge = 500;
    boolean chq = true;
    CurAcc (String name, int acc, double bal, double min, boolean chq, double c)
    {
        super(name, acc, bal);
        minbal = min;
        chq = chq;
        charge = c;
    }
    void withdraw (double amt)
    {
        bal -= amt;
        System.out.println("Cheque Book available = " + chq);
    }
}

```

bootom
void check ()
§

if (bal < minbal)
§

System.out.println("Balance below minimum
charge + " charge imposed").

bal - = charge;

System.out.println("Charge deducted from balance").

§ exit();

§ exit();

void withdraw (double amt)

this.check ();

if (amt > bal)
§ bal - = amt;

System.out.println("Withdraw successful in current

Balance = Rs " + bal);

else System.out.println("withdraw unsuccessful");

Class SavAcc extends Account {

double interestRate, amount, t;

int t; boolean ch;
SavAcc (String name, int acc, double bal, double i,
§ address, date, t, ch);

super(name, acc, bal);

interestRate = i; this.t = t;

amount = amount; chg = ch;

void deposit (double amt)

§ super.deposit(amt);

super.printBal();

void Cint ()

double ci = bal * Math.pow((1+interestRate), t) - bal;

bal + = ci;

System.out.println ("Compound Interest = Rs " + ci +
" In Current Balance = Rs " + bal);

}

void Cheque ()

{

System.out.println ("Cheque Book available = " + chq);

}

}

public class Bank {

public static void main (String args[]) {

Customer a = new Customer();
SavAcc s = new SavAcc();

Account a1 = new Account();

Scanner scan = new Scanner (System.in);

System.out.println ("Enter customer details : ");

System.out.println ("Enter name : ");

String name = scan.nextLine();

System.out.println ("Enter accountnumber = ");

int acc = scan.nextInt();

System.out.println ("Enter balance = ");

double bal = scan.nextDouble();

Account a = new Account (name, acc, bal);

System.out.println ("Enter type of account Inv. Savings
In 2. Current ");

int ch = scan.nextInt();

switch (ch) {

case 1: { System.out.println ("Enter interestrate = ");
double i = scan.nextDouble();

System.out.println ("Enter term in years = ");
double t = scan.nextDouble();

SavAcc s = new SavAcc (name, acc, bal,

System.out.println ("Enter withdraw amt : ");
double amt = scan.nextDouble();

s. cInt ();

(s. withdraw (500.0));

s. cheque ();

} break;

Case 2 : { System.out.println ("Enter min balance = ");
double m = scanner.nextDouble();
System.out.println ("Enter service charge = ");
double c1 = scanner.nextDouble();
Current c = new Current (name, acc, bal, m,
term, c1);
double amt = scanner.nextDouble();
c. Cheque ();
c. withdraw (amt);

} break;

default : System.out.println ("Invalid choice");

}

{

Print
right

Output is :

Enter customer details:

Enter name : ABC

Enter account : 123

Enter balance : 10000

Enter type of account :

1. Savings

2. Current

check available = balance ?

Enter interest rate = 8 %

Enter term in years = 1 %

Compound interest = Rs. 800

Current Balance = 10800

Enter withdraw amt = 500

Withdraw successful

Current Balance = 10300

Output (ii):

Enter customer name details;

Enter name: BCD

Enter account: 245

Enter balance: 50000

Enter type of account:

1. Savings
2. Current
- 2.

cheque book available = true

Enter min balance = 500

Enter service charge = 50

Enter withdraw amount = 1500

cheque book available = true

withdraw @ successful

current Balance = 48500

19/01/24

Algorithm

Step 1: Start

Step 2: enter name, acc, bal, ch

Step 3: ^{switch} if (ch = 1)

 input rate, time

$$ci = bal * (1 + rate)^t - bal$$

$$bal = bal - ci;$$

 output bal, ci

 input withdraw

$$bal = bal - withdraw$$

 output bal;

 output "cheque book unavailable"

 endif stat if

Step 4: else if (ch = 2)

 input mbal, scharge

 if (bal < mbal)

$$bal = bal - scharge$$

 endif stat

 output bal;

 input withdraw

$$bal = bal - withdraw$$

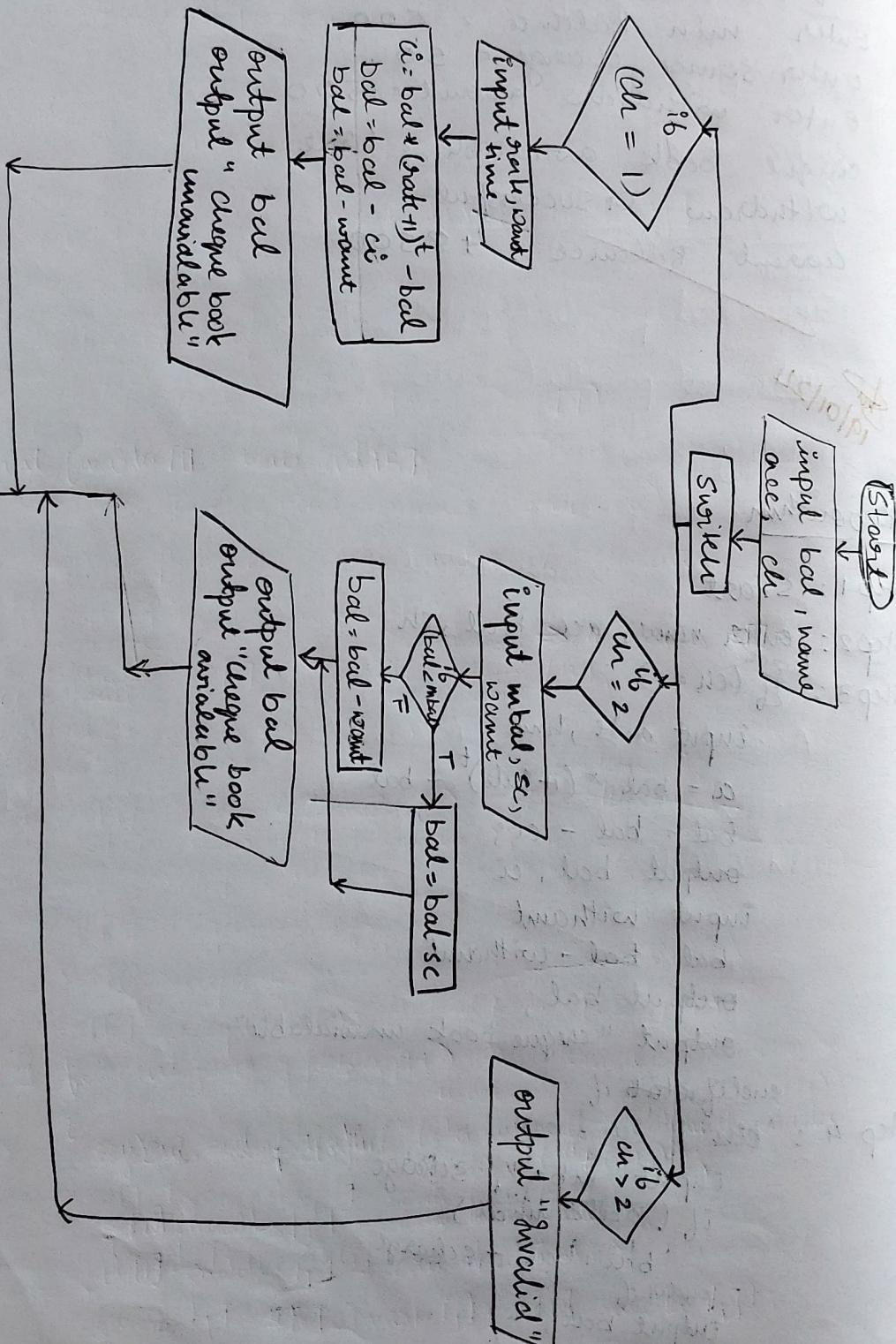
output bal
 output "cheque book available"
 endif; b

Step 5: else

output invalid

Step 6: stop

Flowchart:-



```
C:\Users\BMSCE\Desktop\014>javac Bank.java
```

```
C:\Users\BMSCE\Desktop\014>java Bank.java  
Error: Could not find or load main class Bank.java
```

```
C:\Users\BMSCE\Desktop\014>java Bank
```

```
Enter customer details:
```

```
Enter name:
```

```
abc
```

```
Enter aac:
```

```
123
```

```
Enter balance:
```

```
10000
```

```
Enter type
```

```
1.Sav
```

```
2.Curr
```

```
1
```

```
Enter int-
```

```
8
```

```
Enter term-
```

```
1
```

```
false
```

```
80000.0 90000.0
```

```
Rs 89500.0
```

```
Name: Aditi C USN:1BM22CS014
```

C:\Users\BMSCE\Desktop\014>javac Bank.java

C:\Users\BMSCE\Desktop\014>java Bank

Enter customer details:

Enter name:

bcd

Enter aac:

234

Enter balance:

50000

Enter type

1.Sav

2.Curr

2

Enter min=

500

Enter charge=

50

true

Rs 49500.0

Name: Aditi C

USN:1BM22CS014